

FIG.1
PRIOR ART

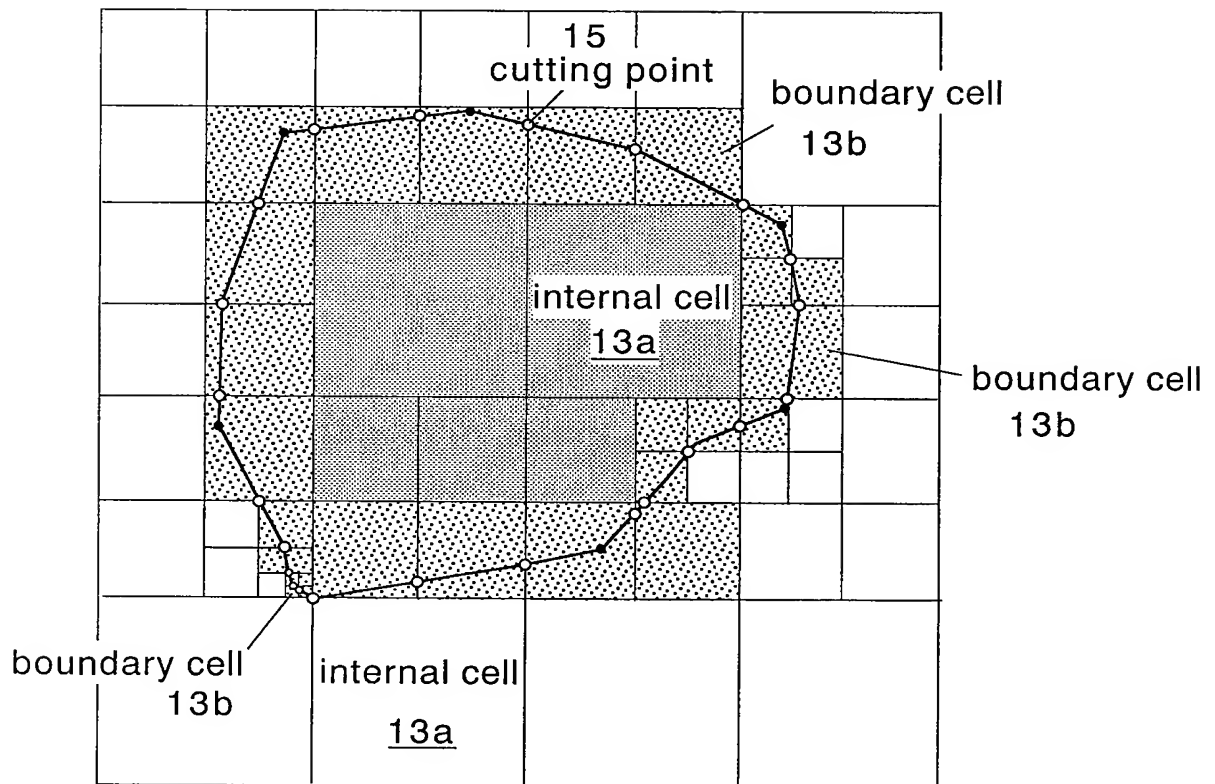


FIG.2

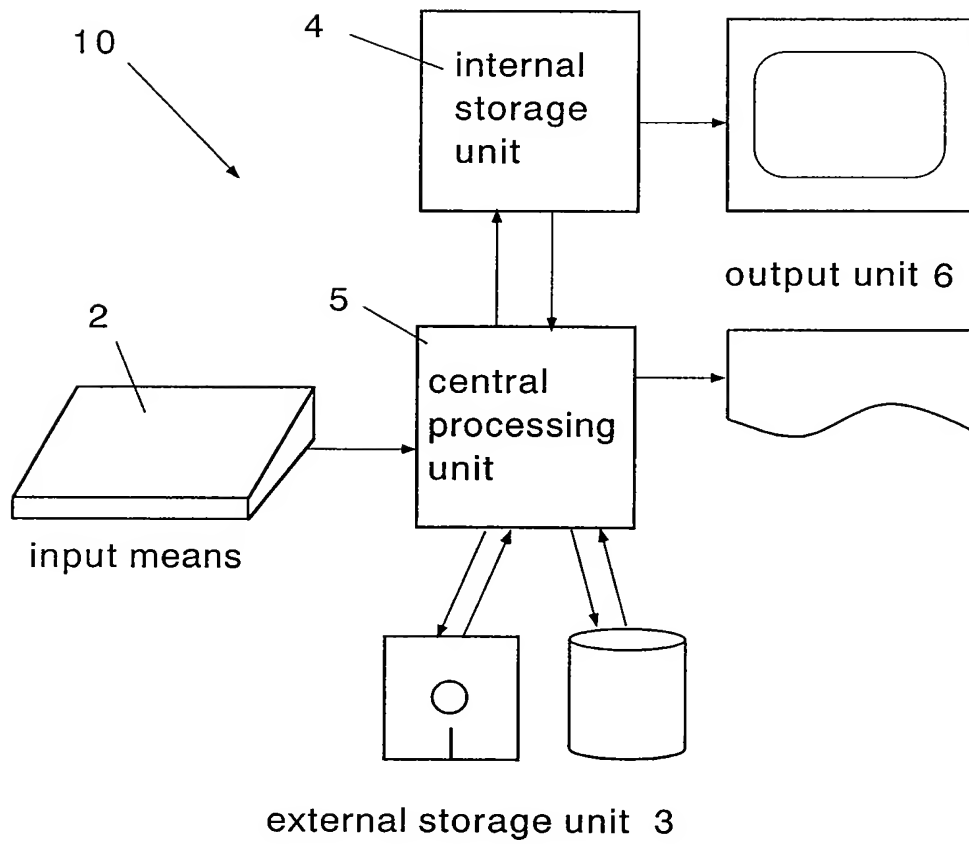
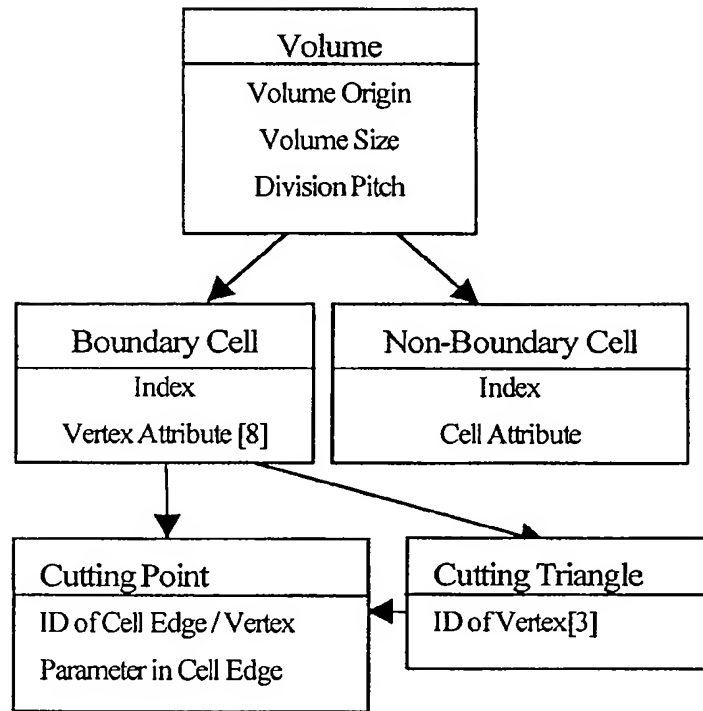
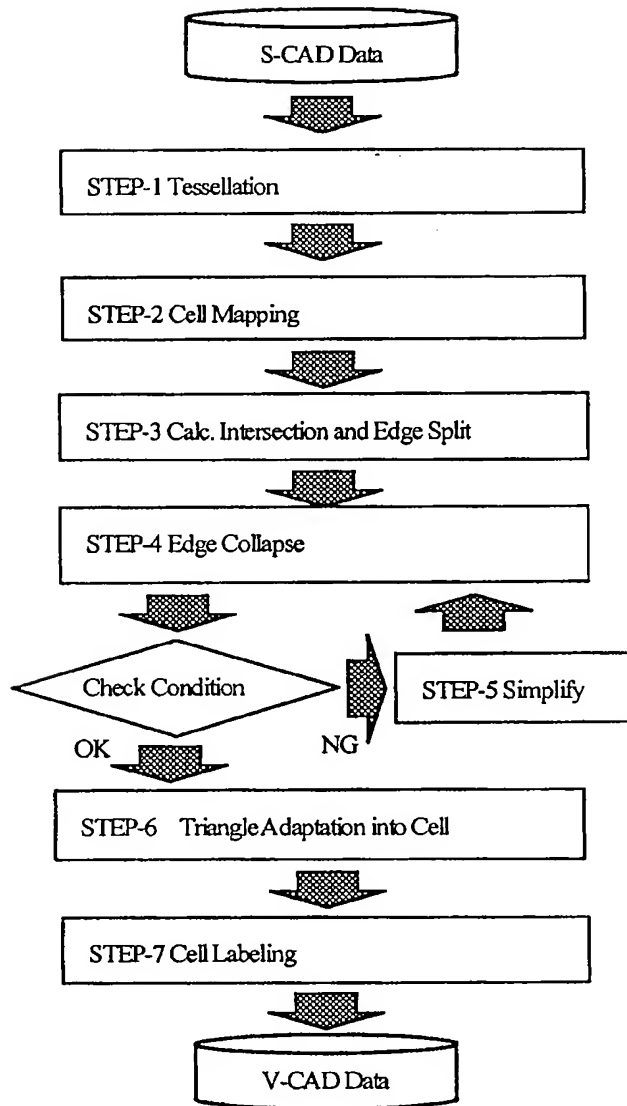


FIG.3



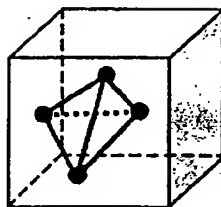
V-CAD Data Structure

FIG.4



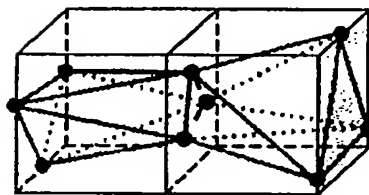
Flow Chart

FIG.5



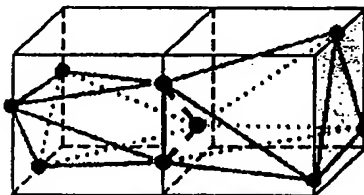
isolated polyhedron

FIG.6



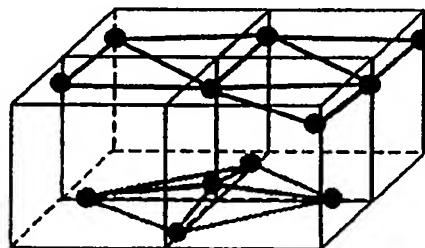
on-plane point connection

FIG.7



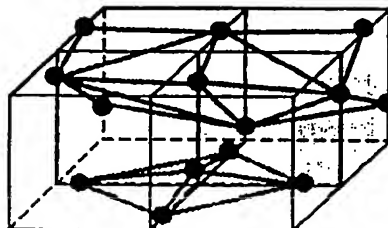
on-the-same-edge connection

FIG.8



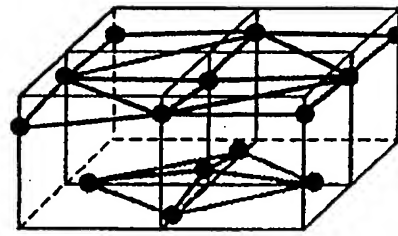
boundary point

FIG.9



bent shape

FIG.10



through shape

FIG.11A

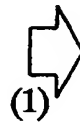
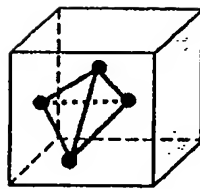
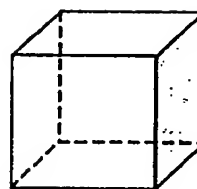


FIG.11B



processing of isolated polyhedron (triangle patch)

FIG.12A

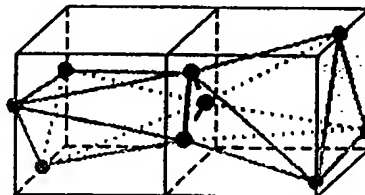


FIG.12B

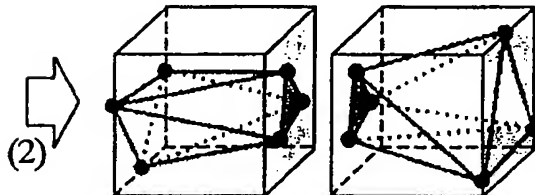
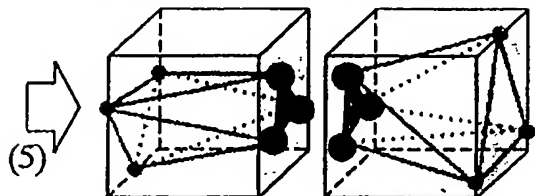


FIG.12C



processing of connected patch via on-plane point

FIG.13A

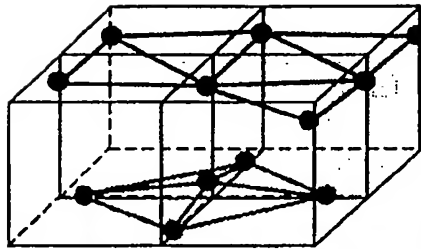


FIG.13B

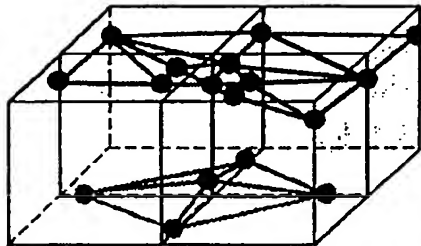
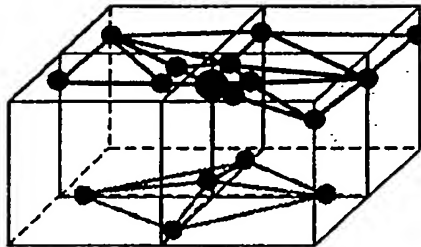


FIG.13C



processing (1) of one edge plurality of cutting points,
boundary point

FIG.14A

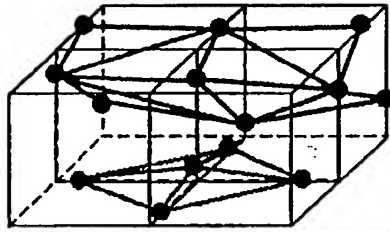


FIG.14B

(4)

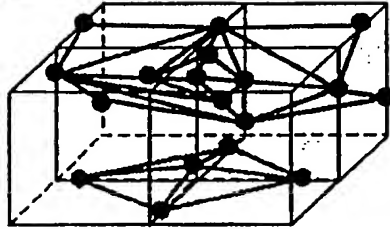
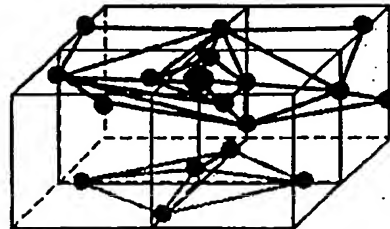


FIG.14C

(5)



processing (2) of one edge plurality of cutting points,
bending point

FIG.15A

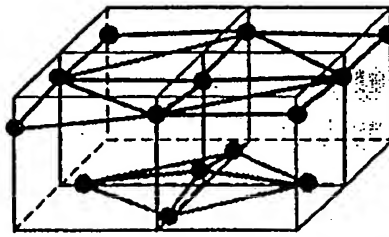


FIG.15B

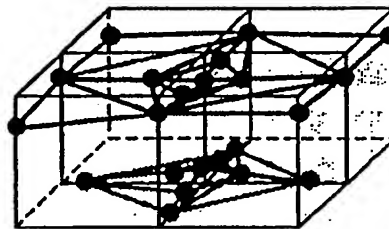


FIG.15C

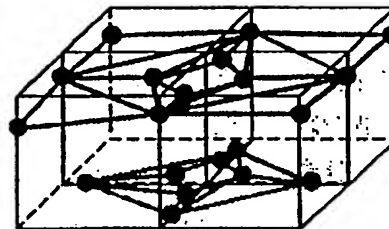
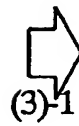
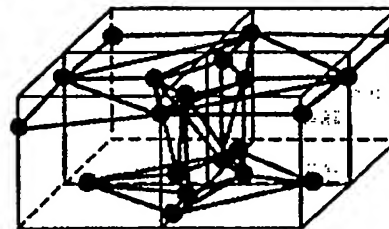
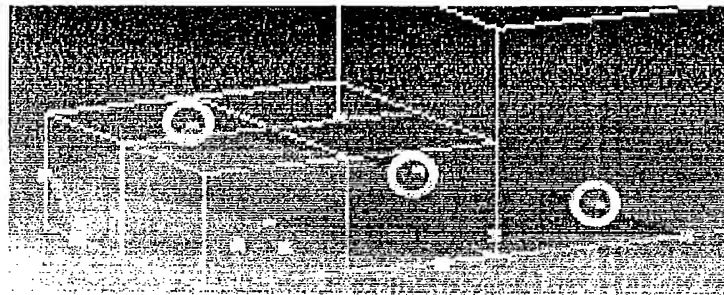


FIG.15D



processing (3) of one edge plurality of cutting points,
two through planes

FIG.16



On Face Cutting Points

FIG.17A

Color Plate

Molding Part

Up Left : B-rep Data

Up Right : Volume Data(32x128x32)

Down Left : Voxel(32x128x32)

Down Center : Octree

Down Right : Voxel(64x256x64)

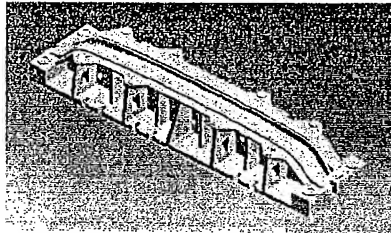


FIG.17B

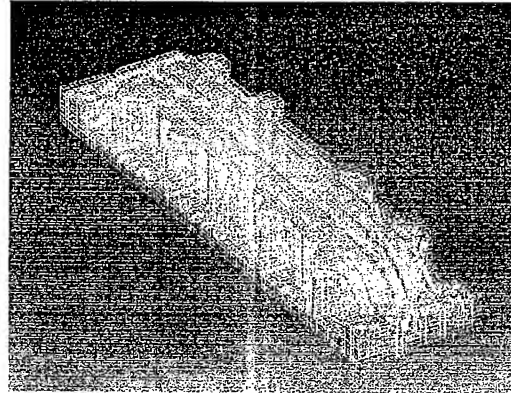


FIG.17C

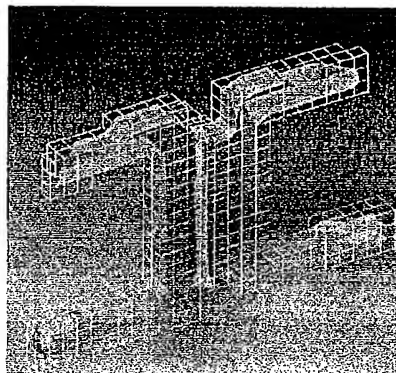


FIG.17D

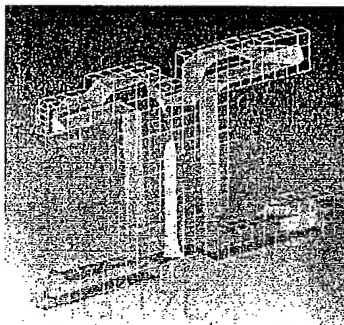


FIG.17E

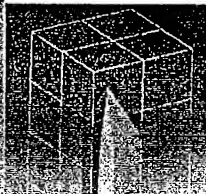


FIG.17F

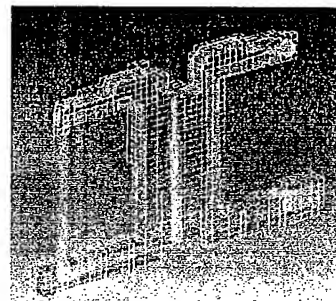


FIG.18A

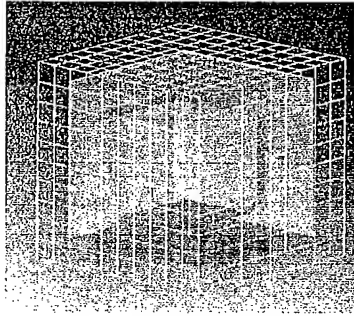
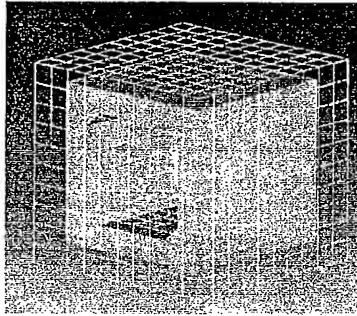


FIG.18B



Left : Original
Right : Subtraction
(Yellow - Blue)

Boolean Operation for Sticking two Item